DEESME

National schemes for energy efficiency in SMEs

DEESME has received funding from the European Union's Horizon 2020 Research and innovation programme under grant agreement No 892235.

Auditing and Managing: DEESME's tools, integration of multiple benefits.

DEESME Final Event

6 June 2023

Bruxelles, COMET Louise

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Auditing and Managing:
DEESME's tools, integration of Multiple Benefits

DEESME suggests **approaching energy efficiency investments from a strategic perspective.**

The recognition of the multiple benefits that go along with energy efficiency is **based on the analysis of the business model.**

The following tools were developed to show companies how to take profit of energy efficiency by assessing and managing the integrated aspects according to the Multiple Benefits approach:

- ✓ Multiple Benefits approach to energy audit
- ✓ The Energy Management System supporting the Multiple Benefits approach
- ✓ Investments analysis according to Multiple Benefits Approach

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Multiple Benefits approach to Energy Auditing

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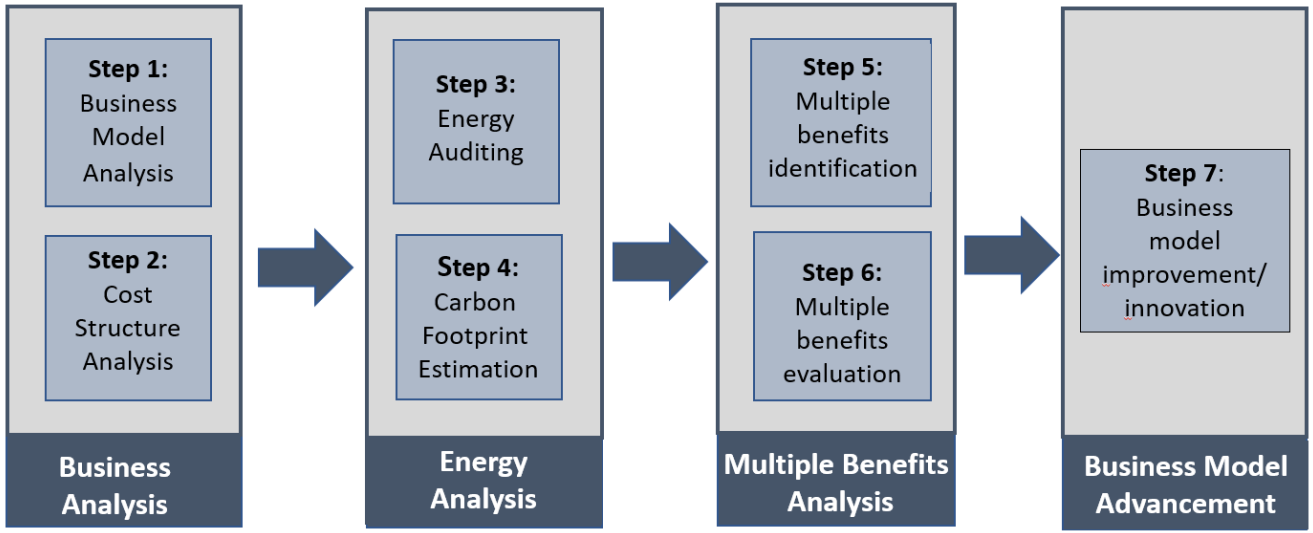
Multiple Benefits approach to Energy Auditing: methodology

The proposed DEESME multiple benefits approach to energy auditing combines business model analysis with energy efficiency in order to achieve a dual objective:

- ✓ relate the energy efficiency decisions with the attainment of the general business objectives
- ✓ introduce concepts of energy efficiency and sustainability in the business modelling analysis



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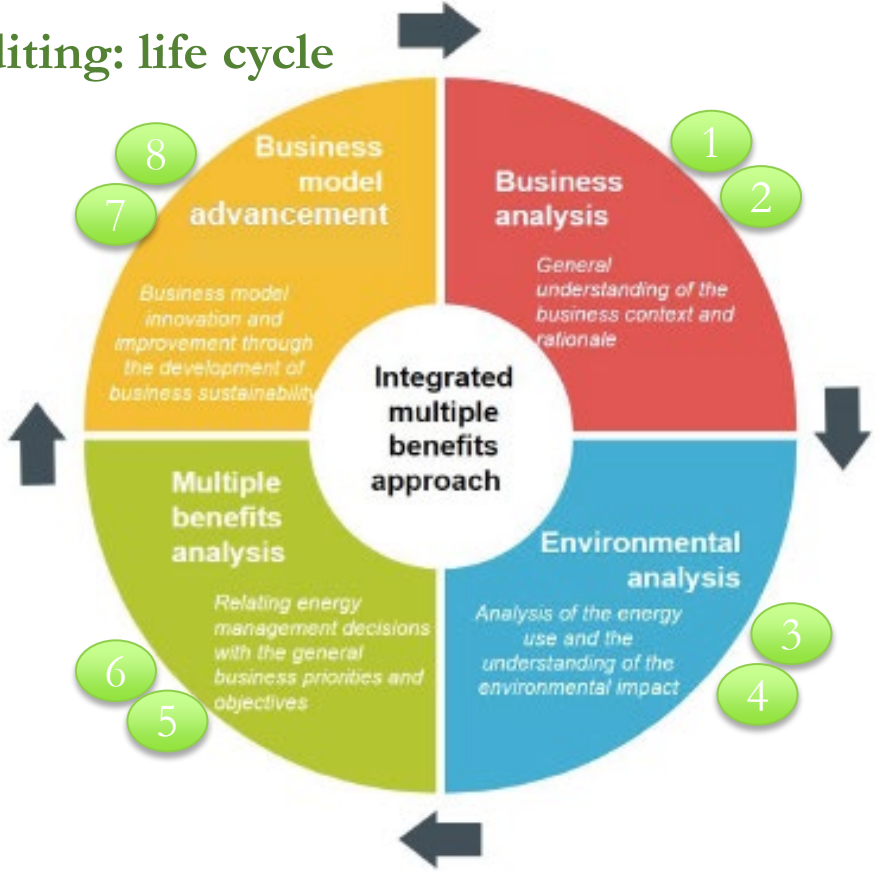
Multiple Benefits approach to Energy Auditing: life cycle

The DEESME methodology can be seen as a life cycle that begins and ends with the business model analysis – as a diagnostic and as a strategic tool, respectively.

Each iteration of the cycle leads to improved levels of energy efficiency and business model sustainability through improvement and innovation.



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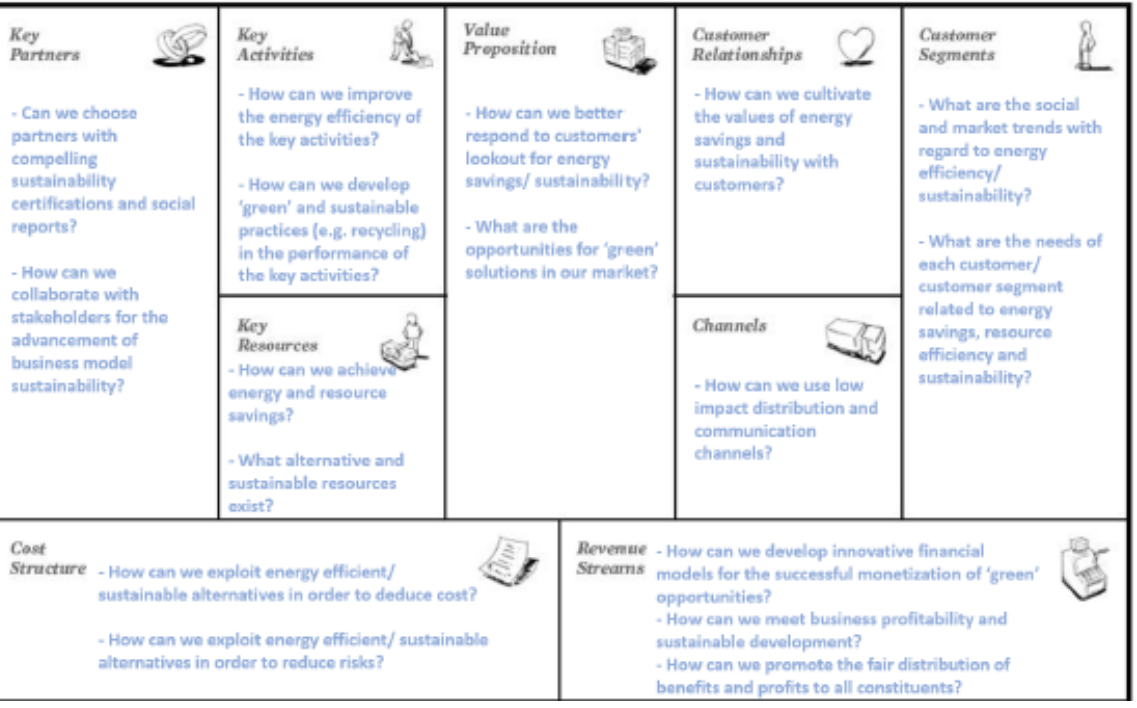
List of Multiple Benefits with regard to the Business Model Canvas and Business Model Sustainability Advancement



DOMAIN	BENEFIT TYPE	INDICATOR
Value Proposition	1. Improved product/ service efficiency	Energy cost per unit of product/ service
	2. Introduction of new products/ services	N° of new 'green' products/ services
	3. Development or innovations	Total R&D expenses for 'energy efficiency' initiatives
Activities	4. Increased productivity	Value of output items/ Value of input items
	5. Increased utilization	Capacity utilization
	6. Improved maintenance	Maintenance Unit Cost
	7. Reduced carbon footprint	Total GHG emissions per year
	8. Improved quality	Right First Time
	9. Improved Safety	Incidence Rate
Resources	10. reduced energy consumption	Total energy consumption per year
	11. Improved raw materials consumption	Quantity of raw materials purchased
	12. Increased recycling	Percentage of total waste that is recycled
	13. Reduced waste	Waste reduction rate
	14. Increased employee satisfaction	Employee Satisfaction Index
Customers	15. Acquisition of 'green' customers	'Green' customers share
	16. Acquisition of new customers	New customers share
	17. Increased customer satisfaction	Satisfied customers share
	18. Increased customer loyalty	Loyal customers rate
Partners	19. Improved supply chain relationships	Total n° of suppliers with ISO certification for energy or environmental management
	20. Improved stakeholder relationships	Total n° of stakeholders involved in decision making
	21. Reduced litigation risks	Total amount of expenses and fines related to environmental law violations
	22. Increased regulatory compliance	N° of EU and national energy policies adopted

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The ENergy Management System supporting the Multiple Benefit Approach

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The ENergy Management System supporting the MB Approach

- ✓ **The MB approach is an integrated approach** it is NOT an integrated management system
- ✓ An integrated management system can be defined as a unique system to manage different aspects of an organization according to various standards like energy management, environmental and health&safetey standards
- ✓ Once a company decides to implement the ISO 50001 standard, the inclusion of MB is not mandatory, rather it is at the company discretion; ISO 5001 certification is not applied to MB
- ✓ Multiple Benefits identification helps defining other (non-energy) KPIs to be used in the Extended EnMS, and also gives management inputs to energy policy
- ✓ **Extended EMS: an ENergy Management System that intends to manage the implementation of the MB approach whose scope includes the mutiple benefits**
- ✓ **CURRENTLY WORKING ON A NEW STANDARD!!!!**

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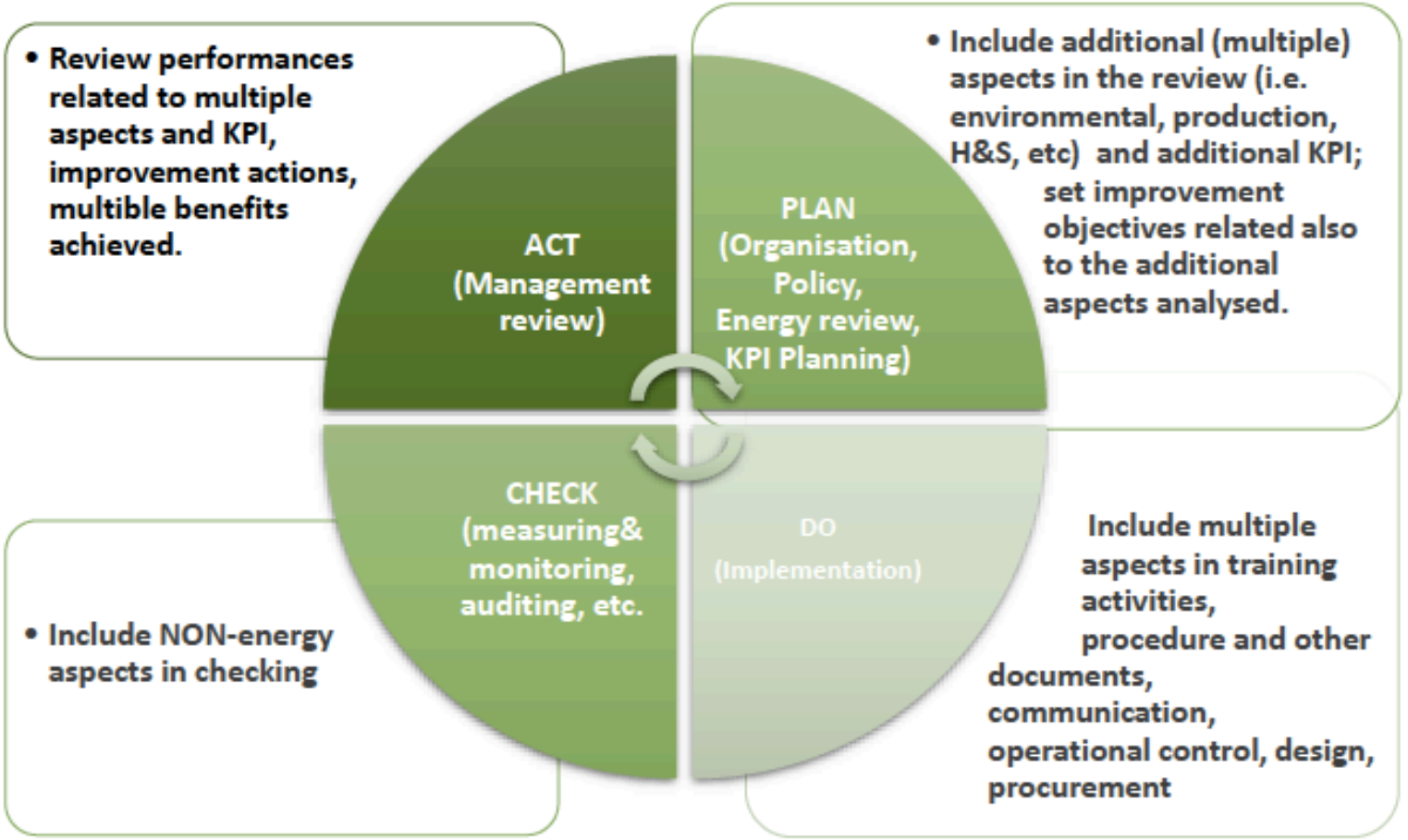
The ENergy Management System supporting the Multiple Benefit Approach: interaction with ISO 50001 implementation cycle (Deming cycle)

The approach suggests managerial and operational solutions to keep the MB aspects under the management control and improve them over time to achieve MB.



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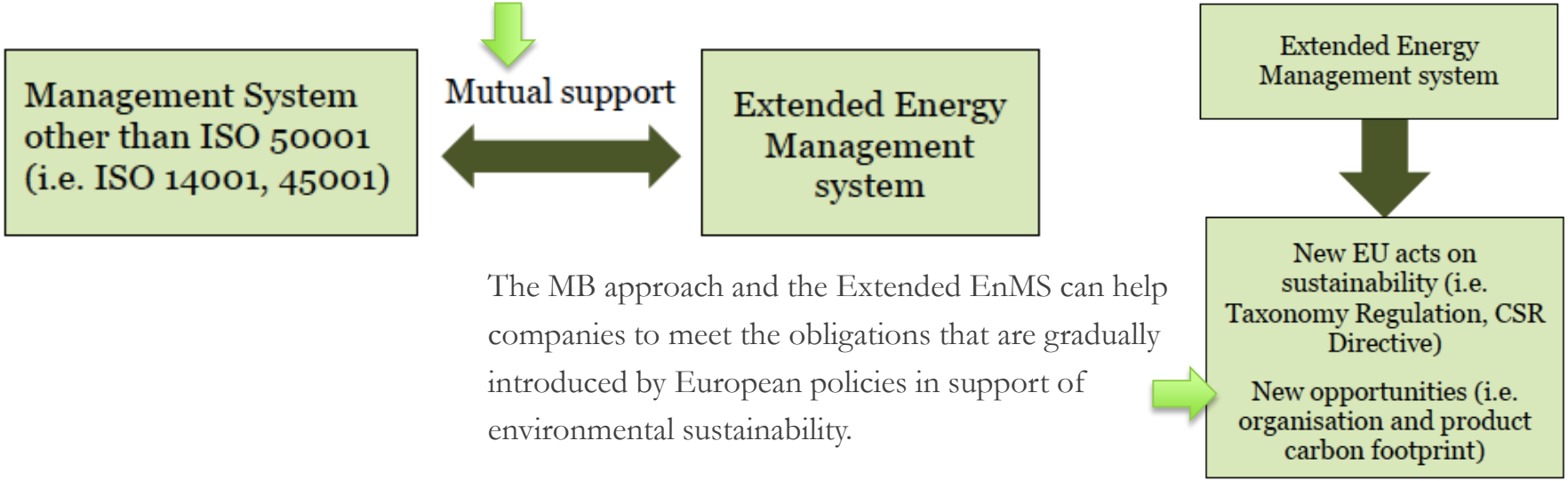
The ENergy Management System supporting the Multiple Benefit Approach: relationship with Management Systems other than ISO 5001 and new EU policies on sustainability

Companies already adopting other management systems could have an advantage in applying the MB approach into the EnMS. Similarly, the assessment and management of non-energy aspects in the energy management system can facilitate the implementation of the reference standard and certification: the inclusion of environmental aspects in the Extended Energy Management System can help a company if it decides to obtain ISO 14001 environmental certification.



The MB approach and the Extended EnMS can help companies to meet the obligations that are gradually introduced by European policies in support of environmental sustainability.

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Investments analysis according to the multiple benefit approach

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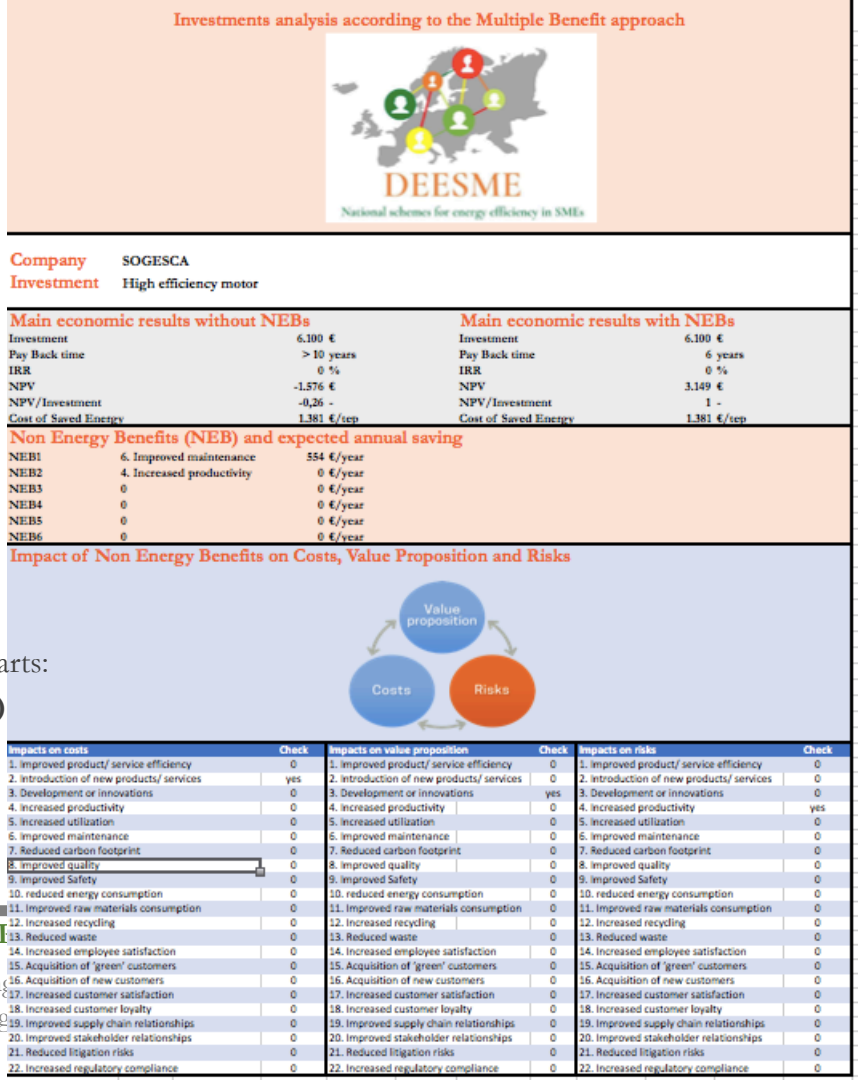
Investments analysis according to the multiple benefit approach – xls tool

- SOGESCA developed a tool for investments analysis according to the MB approach
- Target: companies that have been involved in energy audits
- Tool type: xls spreadsheet
- Information to be compiled by energy auditors together with the companies

Xls spreadsheet divided in 5 parts:

- **Cover (and main results)**
- Introduction
- Specifications
- Economic analysis
- MB



Investments analysis according to the Multiple Benefit approach

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Company	SOGESCA
Investment	High efficiency motor

Main economic results without NEBs		Main economic results with NEBs	
Investment	6.100 €	Investment	6.100 €
Pay Back time	> 10 years	Pay Back time	6 years
IRR	0 %	IRR	0 %
NPV	-1.576 €	NPV	3.149 €
NPV/Investment	-0,26 -	NPV/Investment	1 -
Cost of Saved Energy	1.381 €/tep	Cost of Saved Energy	1.381 €/tep

Non Energy Benefits (NEB) and expected annual saving

NEB1	6. Improved maintenance	554 €/year
NEB2	4. Increased productivity	0 €/year
NEB3	0	0 €/year
NEB4	0	0 €/year
NEB5	0	0 €/year
NEB6	0	0 €/year

Impact of Non Energy Benefits on Costs, Value Proposition and Risks

Impacts on costs	Check	Impacts on value proposition	Check	Impacts on risks	Check
1. Improved product/ service efficiency	0	1. Improved product/ service efficiency	0	1. Improved product/ service efficiency	0
2. Introduction of new products/ services	yes	2. Introduction of new products/ services	0	2. Introduction of new products/ services	0
3. Development or innovations	0	3. Development or innovations	yes	3. Development or innovations	0
4. Increased productivity	0	4. Increased productivity	0	4. Increased productivity	yes
5. Increased utilization	0	5. Increased utilization	0	5. Increased utilization	0
6. Improved maintenance	0	6. Improved maintenance	0	6. Improved maintenance	0
7. Reduced carbon footprint	0	7. Reduced carbon footprint	0	7. Reduced carbon footprint	0
8. Improved quality	0	8. Improved quality	0	8. Improved quality	0
9. Improved Safety	0	9. Improved Safety	0	9. Improved Safety	0
10. reduced energy consumption	0	10. reduced energy consumption	0	10. reduced energy consumption	0
11. Improved raw materials consumption	0	11. Improved raw materials consumption	0	11. Improved raw materials consumption	0
12. Increased recycling	0	12. Increased recycling	0	12. Increased recycling	0
13. Reduced waste	0	13. Reduced waste	0	13. Reduced waste	0
14. Increased employee satisfaction	0	14. Increased employee satisfaction	0	14. Increased employee satisfaction	0
15. Acquisition of 'green' customers	0	15. Acquisition of 'green' customers	0	15. Acquisition of 'green' customers	0
16. Acquisition of new customers	0	16. Acquisition of new customers	0	16. Acquisition of new customers	0
17. Increased customer satisfaction	0	17. Increased customer satisfaction	0	17. Increased customer satisfaction	0
18. Increased customer loyalty	0	18. Increased customer loyalty	0	18. Increased customer loyalty	0
19. Improved supply chain relationships	0	19. Improved supply chain relationships	0	19. Improved supply chain relationships	0
20. Improved stakeholder relationships	0	20. Improved stakeholder relationships	0	20. Improved stakeholder relationships	0
21. Reduced litigation risks	0	21. Reduced litigation risks	0	21. Reduced litigation risks	0
22. Increased regulatory compliance	0	22. Increased regulatory compliance	0	22. Increased regulatory compliance	0

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